UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK

ROCHE DIAGNOSTICS GMBH, a German corporation; and ROCHE MOLECULAR SYSTEMS, INC., a California corporation

Plaintiffs

vs.

ENZO BIOCHEM, INC., a New York corporation; and ENZO LIFE SCIENCES, INC., a New York corporation, formerly known as ENZO DIAGNOSTICS, INC.

Defendants

04 Civ. 4046 (RJS)

DECLARATION OF PROFESSOR JAMES L. LEIGHTON, Ph.D. IN SUPPORT OF PLAINTIFF ROCHE'S RESPONSIVE CLAIM CONSTRUCTION BRIEF REGARDING U.S. PATENT NO. 4,943,523

OF COUNSEL:

Robert J. Gunther, Jr.
Omar A. Khan
WILMER CUTLER PICKERING HALE AND DORR LLP
7 World Trade Center
250 Greenwich Street
New York, NY 10022
Tel: (212) 230-8800

Ryann Muir
WILMER CUTLER PICKERING HALE AND DORR LLP
60 State Street
Boston, MA 02109
Tel: (617) 526-6000

Attorneys for Plaintiffs Roche Diagnostics GmbH and Roche Molecular Systems, Inc.

I. INTRODUCTION

I, James L. Leighton, Ph.D. declare and state:

1. I have been retained on behalf of Roche Diagnostics GmbH and Roche Molecular Systems, Inc. (collectively, "Roche"). I understand that Enzo BioChem, Inc. and Enzo Life Sciences, Inc. (collectively, "Enzo") have accused Roche of infringing certain claims of Enzo's U.S. Patent No. 4,943,523 ("the '523 Patent").

2. I previously submitted a declaration, dated December 20, 2013, in support of Plaintiff Roche's opening brief regarding claim construction of the "523 Patent ("Leighton Op. Decl."). My previous declaration provided my qualifications, and my opinions regarding the level of ordinary skill in the art of the '523 Patent. *See* Leighton Op. Decl. ¶¶ 3-10.

3. I have reviewed Enzo's Opening Markman Brief Related to U.S. Patent Nos. 4,943,523 and 5,082,830 ("Enzo's Brief"), the Declaration of Dr. David H. Sherman ("Sherman Decl."), and Exhibits 7, 8, and 14 to the Declaration of Justin MacLean ("MacLean Decl.").

II. OPINIONS

4. As I explained previously, a person of ordinary skill in the art ("POSA") would necessarily understand the detectable molecule claimed in the '523 Patent in the context of the reactions that link the claimed elements to each other. *See, e.g.*, Leighton Op. Decl. ¶¶ 17, 42, 51, 58. This is evident from Enzo's Brief and Dr. Sherman's Declaration, both of which contain arguments that reference elements of the claimed molecule "becoming modified" or "attaching" or "forming a bond." These terms that Enzo and Dr. Sherman use—"becoming modified" and "attaching" and "forming a bond"—describe ***processes*** in which chemical reactions are taking place. Enzo cannot discuss the claim terms of the '523 patent without invoking the reactions that link the claimed elements together because the claim terms can only be understood in the context

of their chemical function. I provide specific examples below for each of the relevant claim terms.

5. In addition, Enzo and Dr. Sherman argue that many disputed claim terms should be given their "plain meaning." However, as I discussed previously and reiterate below, several of these terms do not have an ordinary or plain meaning that would be understood by a POSA. In those instances, a POSA would look to the patent claims, specification, and prosecution history to understand the meaning of the claim terms, as I have done.

A. REACTIVE GROUP (CLAIM 1)

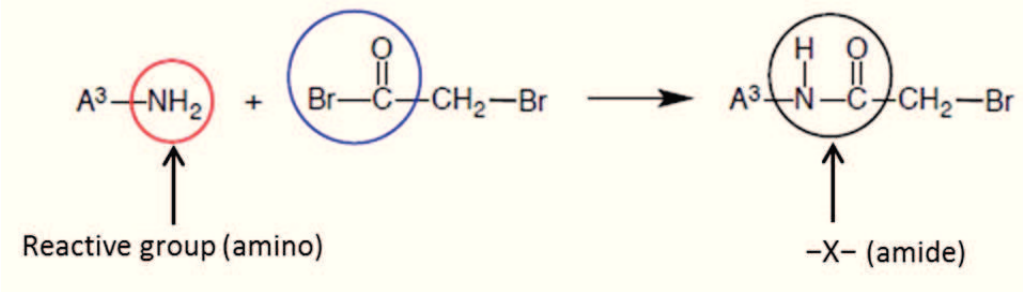
Roche's Proposed Construction	Enzo's Proposed Construction
a functional chemical group that undergoes a reaction to bond with an –X- moiety to form the detectable molecule	amino, hydroxyl, 1,2-cis diOH, halide aryl,[1] imidazoyl, carbonyl, carboxyl, thiol or a residue comprising an activated carbon

6. Dr. Sherman argues that a POSA would understand the term "reactive group" to mean the list of chemical groups recited in claim 1. *See* Sherman Decl. ¶ 26; *see also* Enzo's Brief at 11 ("Claim 1 unambiguously defines the specific 'reactive groups' that may be present by listing them out, without regard to how those reactive groups are formed or used.") Contrary to Enzo's position, the groups listed in claim 1 were chosen precisely because of how they are used. They are ***reactive*** groups, meaning that they can ***undergo a reaction*** to bond with another atom or group of atoms. If the chemical groups listed in claim 1 did not have the function of being reactive, there would be no reason to identify particular groups either in the patent specification or in the claim.

[1] In my opinion, "halide aryl" is a typographical error, and should read, "halide, aryl" to indicate two different groups: halide groups and aryl groups. This is evident from the specification of the '523 Patent, in which each instance where the reactive groups are listed, a comma separates halide and aryl. *See* '523 Patent Abstract; *id.* at col. 4:5-9; *id.* at col. 6:9-14.

7. In addition, each of the reactive groups listed in claim 1 is a group that a POSA would recognize as being present on the molecules defined by A^3 or easily introduced onto A^3 by way of a reaction. For example, amino, imidazoyl, carboxyl, and thiol groups are found on polypeptides (one of the types of molecules that claim 1 identifies as A^3), and hydroxy and 1,2-cis diOH groups are found on polysaccharides (another type of molecule that claim 1 identifies as A^3). *See* '523 Patent at col. 6:24-36.

8. Roche's proposed construction is consistent with the language of claim 1 and accurately describes the listed groups, *i.e.*, they are functional chemical groups that undergo a reaction to bond with an -X- moiety to form the detectable molecule. An example from the '523 Patent is shown below, in which one of the reactive groups listed in claim 1, an amino group (circled in red), undergoes a reaction with the group circled in blue. *See* '523 Patent at col. 15:50-63 (left side of Scheme V). The two starting molecules join to form an amide group (circled in black), which is the first group listed in claim 1 for the –X– element. Once the amide group, X, has formed, the amino group, *i.e.*, the reactive group, which was present on A^3 no longer exists. It has reacted to form a new and distinct functional group, the amide group.



Dr. Sherman does not dispute that the reactive groups listed in claim 1 are functional chemical groups, consistent with Roche's proposed construction. And, he agrees that the purpose of the reactive group is "to bond with an –X– moiety." Sherman Decl. ¶ 22; *see* Enzo's Brief at 10. Further, neither Enzo nor Dr. Sherman dispute that each of the reactive chemical groups listed in

claim 1 can ***only*** "bond with an –X– moiety" by undergoing a reaction (such as the one shown above). All of this is consistent with Roche's proposed construction.

9. Dr. Sherman's position that function is not relevant to the meaning of "reactive group" is inconsistent with his arguments as to why the terms "at least one modifiable reactive group" and "modified reactive groups" are not indefinite. I note that Dr. Sherman's arguments regarding indefiniteness are based on the reactive group undergoing a reaction, and are consistent with Roche's proposed construction of "reactive group." *See, e.g.*, Sherman Decl. ¶ 22 (Each of the reactive groups listed in claim 1 "would have been well known at the time to a POSA, including ***for use in attaching chemical structures such as those described in the claim***.") (emphasis added); *id.* at ¶ 23 ("[A] POSA would readily understand the . . . phrase 'modified reactive groups' to mean one or more reactive chemical groups ***which are modified as part of a modified A^3 when A^3 is attached to X***." (emphasis added); *id.* at ¶ 24 ("[A] POSA would also understand that ***when the claimed modifiable reactive groups are used to attach chemical structures, they necessarily become 'modified,' and, that basic concept is what is being claimed***." (emphasis added); *see also*, Enzo's brief at 10 ("The claimed modifiable reactive group of A^3 ***is involved in the attachment of A^3 to the 'X' module*** of the claimed linker."). Dr. Sherman's and Enzo's reference to "attaching" chemical groups to one another necessarily means that they are functional chemical groups that undergo a reaction. Again, this is consistent with the patent specification. *See, e.g.*, '523 Patent col. 14:43-48 ("The ***attachment*** of the (substituted or unsubstituted) cyclohexane skeleton to A^3 is carried out via a basic nucleophilic substitution ***reaction*** between the oxygen, nitrogen or preferably, the sulfur atom of a thiol-containing compound, and the displaceable group or groups on the cyclohexane.").

B. MODIFIABLE/MODIFIED REACTIVE GROUP (CLAIM 1)

Roche's Position	Enzo's Position
The terms "at least one modifiable reactive group" and "modified reactive groups" are indefinite under 35 U.S.C. § 112, 2nd paragraph.	The terms "at least one modifiable reactive group" and "modified reactive groups" are both definite and readily understood to refer to the one or more reactive chemical groups which are modifiable and become part of A^3 so as to give a modified A^3 that can attach to X.

10. Enzo argues that Roche's indefiniteness argument is inconsistent with its position that "reactive group" can be construed. *See* Enzo's Brief at 11. I disagree. The meaning of "reactive group" would be understood by a POSA, as discussed above. However, the meanings of "at least one modifiable reactive group" and "modified reactive groups" would be unclear to a POSA in the context of claim 1 because these terms render the structural characteristics of the claimed molecule unclear. In particular, a POSA would not know whether or not the final claimed molecule must contain a modifiable reactive group. *See* Leighton Op. Decl. ¶¶ 47-48.

11. Enzo argues that the POSA would "readily understand that the claimed 'modifiable reactive group' (i.e., the one or more listed reactive chemical groups), necessarily ***becomes 'modified' when A^3 is attached to X***." Enzo's Brief at 10 (emphasis added); *see also* Sherman Decl. ¶ 21; ("[A] POSA would have readily understood [the terms 'at least one modifiable reactive group' and 'modified reactive groups'] to refer to the one or more reactive chemical groups which are modifiable and become part of A^3 so as to give a modified A^3 ***that can attach to X***.") (emphasis added). Based on Enzo's proposed construction, a POSA would not know whether the claimed (*i.e.*, final) detectable molecule must have "at least one modifiable reactive group," as claim 1 states, or, alternatively, whether all of the modifiable reactive groups that were on A^3 prior to its attachment to X could have become modified, leaving no modifiable reactive groups in the final detectable molecule. *See* Leighton Op. Decl. ¶¶ 48-50.

C. E (CLAIM 1)

Roche's Position	Enzo's Position
O, NH or an acyclic divalent sulfur atom, which underwent a reaction to form a bond to R^1 or to Det^b	O, NH or an acyclic divalent sulfur atom

12. Dr. Sherman argues that Roche's construction improperly seeks to add a method step to a claim term that is already clear from its plain language because the three recited chemical groups "were well-known and their meaning readily understood by a POSA at the time of the invention." Sherman Decl. ¶¶ 30-31; *see also* Enzo's Brief at 13. I agree that the listed groups were well known, and indeed their meaning, *i.e.*, their common chemical properties, would have been readily understood by a POSA. Consistent with Roche's proposed construction, these groups would be understood by a POSA to specifically result from nucleophilic reactions of the type disclosed in the '523 Patent. *See* Leighton Op. Decl. ¶¶ 52-54.

13. The '523 Patent states that divalent acyclic sulfur (–S–) is the preferred group for E, and E is –S– in nearly all of the examples shown in the '523 Patent. *See, e.g.*, '523 Patent at col. 7:27-30; *id.* at col. 9:10-21; *id.* at col. 9-10 (Table 1); *id.* at col. 11:42-49 (Compound X); *id.* at col. 15:30-35 (product of Scheme IV); *id.* at col. 17-18:25-33 (Compound VI-6). –S– is preferred because its precursor, thiol (SH), is a very good nucleophile. The '523 Patent makes clear, by utilizing –S– as E almost exclusively, that it is preferred because of its superior performance in this type of reaction.

14. Dr. Sherman argues that nothing in the '523 Patent or prosecution history "requires the added method step that E 'underwent a reaction to form a bond' as Roche's construction seeks to import." Sherman Decl. ¶ 31. Dr. Sherman's statement is incorrect. In ***every molecule*** shown or discussed in the '523 patent, E was a nucleophilic group that

underwent a reaction to form a bond to R^1 or to Det^b, consistent with Roche's proposed construction. *See* Leighton Op. Decl. ¶¶ 52-54. If the chemical function of E were irrelevant to its definition, then the groups listed for E in claim 1 would not have been recited so specifically, and the term would be far broader than a POSA would understand from reading the '523 Patent and its prosecution history. *See id.* at ¶¶ 53, 55.

D. COMPRISING BIOTIN OR A . . . METAL CHELATOR OR A COMPOUND CAPABLE OF YIELDING A METAL CHELATOR (CLAIM 1)

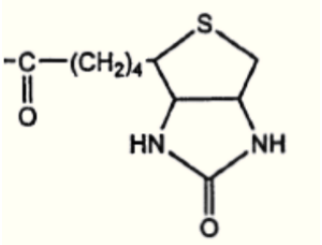
Roche's Position	Enzo's Position
biotin, a substituted or unsubstituted metal chelator or a compound capable of yielding a metal chelator, plus any atoms used to link the biotin, substituted or unsubstituted metal chelator or compound capable of yielding a metal chelator to E	The term "comprising" is open-ended and allows for atoms in addition to those specified.

15. Dr. Sherman argues that a POSA would understand "comprising" to be open-ended, and that it "should include any atoms used to link the specified molecules to E, [but] it should not be limited to only those additional atoms as Roche contends." Sherman Decl. ¶ 34; *see also* Enzo's Brief at 14. Dr. Sherman cites no evidence that the additional atoms can be anything ***other*** than those used to link the specified molecules to E. In ***every instance*** in the '523 Patent where Det^b includes atoms in addition to biotin or the chelator, they are used to link the biotin or chelator to E, consistent with Roche's proposed construction. *See* Leighton Op. Decl. ¶¶ 59-60. There is nothing in the '523 Patent specification or prosecution history to indicate otherwise. *See id.*

16. Moreover, Roche's proposed construction is not unduly narrow. It does not limit the identity, number, or arrangement of the additional atoms. It merely characterizes the chemical function of the additional atoms, consistent with the patent specification and how a

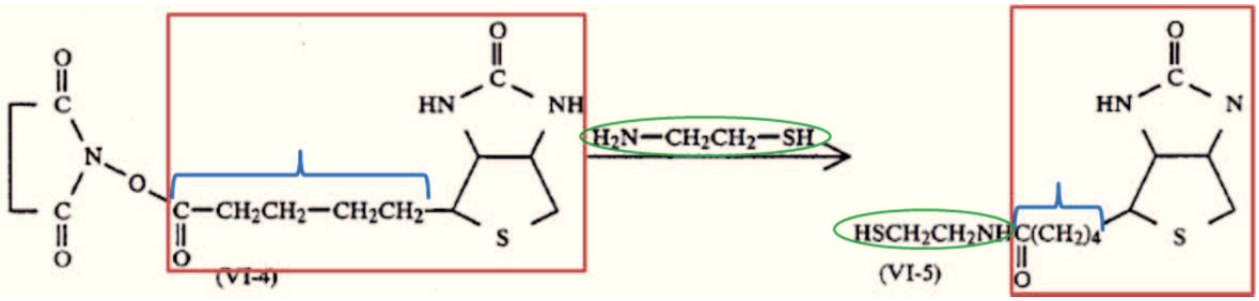
POSA would understand all of the elements of the claimed detectable molecule. *See id.* at ¶¶ 58-60. On the other hand, Enzo's position that this element is essentially unlimited is inconsistent with the '523 Patent specification. A POSA would not understand the Det^b element to arbitrarily include any portion of a molecule that contains biotin or a metal chelator because that would result in a claim of limitless breadth, far beyond anything that is disclosed in the specification of the '523 Patent. *See id.* at ¶ 60.

E. BIOTIN (CLAIMS 1, 15, 20, 40)

Roche's Position	Enzo's Position
	any biotin moieties, derivatives, or analogues which may be used wherever biotin/avidin or biotin/streptavidin-based pairs or detection systems have been used in the prior art

17. Dr. Sherman argues that the term "biotin" should include "a broad class of 'biotin moieties,'" *i.e.*, "any biotin derivatives, analogues and moieties which may be used 'wherever biotin/avidin or biotin/streptavidin-based pairs or detection systems have been used in the prior art.'" Sherman Decl. ¶ 35; *see also* Enzo's Brief at 14-15. Enzo's proposed construction seeks to include biotin derivatives, analogues, and moieties, in spite of not defining "biotin" itself. However, in order to recognize a derivative, analogue, or moiety of a molecule, a POSA must first understand the identity of the original molecule. Roche's proposed construction provides the structure that is understood by a POSA to be biotin. *See* Leighton Op. Decl. ¶ 61; Exhibit 14 to Leighton Op. Decl., *McGraw-Hill Dictionary of Scientific and Technical Terms* 179 (2d ed. 1978).

18. Enzo argues that "[c]onsistent with [a] broad description of biotin, the patent does not depict, or otherwise dictate, a single specific structure for biotin." Enzo's Brief at 15. I disagree. The '523 Patent does depict and describe a structure of biotin that is consistent with Roche's proposed construction. In particular, the specification states: "The attachment of a detectable moiety comprising biotin would generally require ***modification of the biotin side chain by attachment of a sulfur-containing nucleophile***. An example of such a modification is ***shown below in Scheme VI***." '523 Patent at col. 16:67 – col. 17:3 (emphasis added). The reaction from Scheme VI depicting this modification of the biotin side chain is:

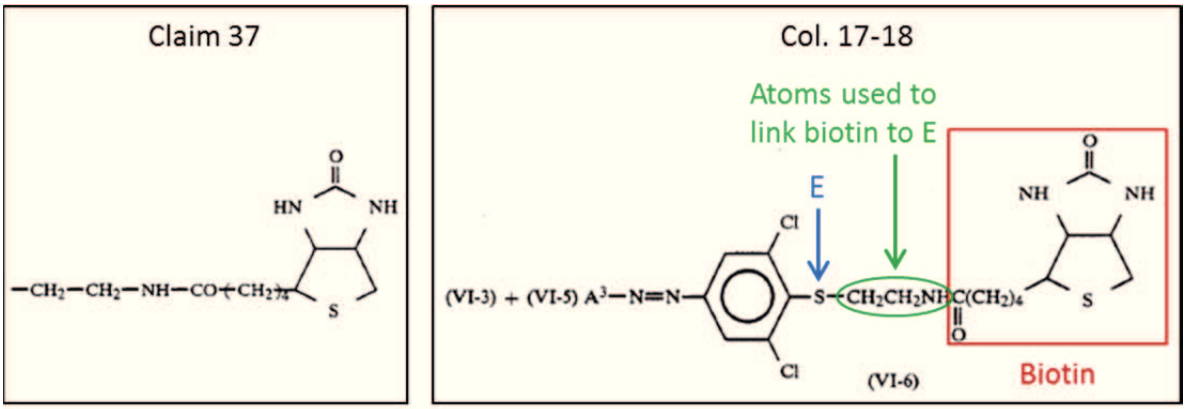


See '523 Patent at col. 17-18:11-33 (Compounds VI-4 and VI-5). Biotin is outlined in red, and the biotin side chain is indicated by the blue bracket.[2] The "sulfur-containing nucleophile" that is attached to the biotin side chain is circled in green. As Compound VI-5 shows, the depiction of biotin in the '523 Patent is identical to the structure proposed by Roche, and is consistent with the understanding of a POSA.

19. The '523 Patent does not define biotin in any way that is contrary to this usual understanding. In fact, as Enzo admits, the '523 patent does not explicitly define biotin at all. *See* Enzo's Brief at 15; Sherman Decl. ¶ 35. Dr. Sherman argues that the '523 patent depicts biotin "moieties" that "contain more atoms than that of the structure proposed by Roche, so Roche's proposed construction cannot be correct." Sherman Decl. ¶ 35; *see also* Enzo's Brief at

[2] In Compound VI-4, shown on the left, the four CH_2 groups of the biotin side chain are written out. In Compound VI-5, shown on the right, they are abbreviated as $(CH_2)_4$.

15. To support this assertion, Dr. Sherman and Enzo cite Table 1 and Claim 37 of the '523 Patent. However, a POSA would understand that these structures depict the instance where Det[b] is biotin plus atoms used to link biotin to E, consistent with Roche's proposed constructions of both the "comprising" term and "biotin." *Compare* '523 Patent claim 37, *with id.* col. 17-18 (Compound VI-6) (shown below).



20. In addition, I disagree that the term "biotin" includes biotin derivatives, analogs, and moieties. As discussed above, the compound "biotin" has a particular chemical structure; derivatives, analogs, and moieties of biotin have different structures. The specification of the '523 Patent does not refer to these different compounds collectively as "biotin." In fact, it explicitly uses the language "biotin and analogues thereof," and "biotin moieties" when it refers to compounds other than "biotin." *See* '523 Patent at col. 3:33; *id.* at col. 3:37. The claims of the '523 Patent do not use the terms "biotin and analogues thereof," or "biotin moieties," and a POSA would not understand the term "biotin" to include these other compounds.

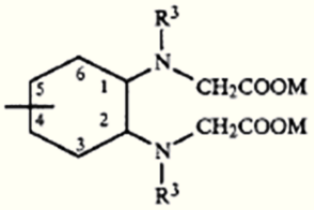
F. CHELATOR (CLAIMS 1, 15, AND 40)

Roche's Position	Enzo's Position
a chemical compound that can form coordinate bonds with a metal ion to form a complex called a chelate	a chemical compound/agent which can complex or combine with a metal ion to become part of a chelate

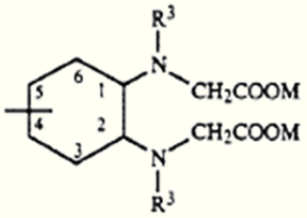
21. The main dispute between Roche and Enzo is whether the term "chelator" in claim 1 can include a chelate. As I explained previously, a chelator is not "part of" a chelate, as Enzo argues. *See* Leighton Op. Decl. ¶¶ 68, 71-72. They are two distinct compounds, with different chemical properties and structures. *See id.* Moreover, for all of the reasons I discussed, based on the claim language, specification, and prosecution history of the '523 Patent, a POSA would not understand claim 1 to include a chelate. *See id.* at ¶¶ 63-70. Enzo and Dr. Sherman do not present any evidence to the contrary.

22. According to Dr. Sherman, claim 2 shows that "a chelator [is] part of a chelate by providing a chemical structure for Det^b, a chelator that is complexed with 'M,' a 'radiometal.'" Sherman Decl. ¶ 36; *see also* Enzo's Brief at 16. However, the structure shown in claim 2 is not a chelate, it is a chelator. The very same structure appears in claim 27 and is explicitly and correctly referred to as "a metal chelator," as shown below.

2. A specific binding assay method … wherein … **Det^b has the formula**

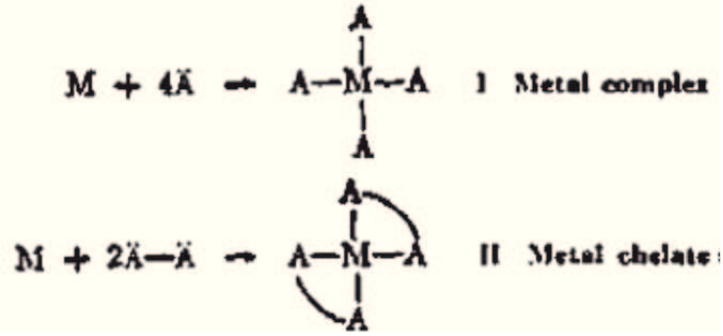


27. The molecule of claim 1 wherein Det^b is a metal chelator selected from one having the formula:



23. As I have explained, a chelate is a ring-shaped structure where at least two chelating groups form coordinate bonds to a metal ion. *See* Leighton Op. Decl. ¶ 65. The reference by Martell *et al.*, cited by Dr. Sherman to support his opinion, actually supports my position. *See* Sherman Decl. ¶ 38 (citing Martell *et al.*, *Chemistry of the Metal Chelate Compounds* at 1 (1952)). In particular, this reference shows the difference between a simple metal complex, where no ring structure is formed, and a metal chelate, where at least two donor groups form a ring with the metal. *See* Exhibit 14 to MacLean Decl., Martell *et al.*, *Chemistry of*

the Metal Chelate Compounds at 1 (1952). The figure from Martel *et al*. is reproduced below. *See id.*



The chelating groups of the structure shown in claims 2 and 27 of the '523 Patent do not form a ring complex with the M, and would not be understood by a POSA to be a chelate. This is further shown by the language of claim 27, where M can be a non-metal cation. A "chelate," by its very definition, requires a metal ion. *See* Leighton Op. Decl. ¶ 65.

24. Dr. Sherman cites other disclosures from the '523 Patent specification that supposedly support his opinion that a chelator is "part of" a chelate. *See* Sherman Decl. ¶ 37. Many of these citations refer to the structure shown in claims 2 and 27, which, as discussed above, shows a chelator, not a chelate. *See* '523 Patent Abstract; *id.* at col. 3:48-65; *id.* at col. 4:34-47; *id.* at col. 7:61 – 8:39. Others of these citations support Roche's proposed construction, and demonstrate that the molecule of claim 1 can contain a "chelator" (as the claim language clearly states), but not a "chelate." *See id.* at col. 1:15-20; *id.* at col. 17:34-50; *id.* at col. 20:54-58; claim 15. I previously explained how these passages of the '523 Patent cited by Dr. Sherman support ***Roche's*** proposed constructions. *See* Leighton Op. Decl. ¶¶ 66-70.

G. COMPOUND CAPABLE OF YIELDING A METAL CHELATOR (CLAIM 1)

Roche's Position	Enzo's Position
a compound that is converted to a metal chelator as part of the detection process	Enzo's position is that any construction of this term should not include the language "converted … as part of the detection process."

25. Dr. Sherman argues that a "chelator or a compound capable of yielding a chelator" means "a chemical compound or agent that can complex or combine with a metal ion to become part of a chelate." Sherman Decl. ¶ 36; *see also* Enzo's Brief at 15. As a matter of science, a metal "chelator" and a "compound capable of yielding a metal chelator" cannot be the same thing, as Dr. Sherman suggests. It would be understood by a POSA that a compound ***capable of yielding*** another compound must be modified in some way before it ***does yield*** the other compound. In other words, some transformation of the compound capable of yielding a metal chelator must take place before the compound is a metal chelator. Therefore, the two terms cannot have the same definition. *See* Leighton Op. Decl. ¶ 75.

26. Enzo proposes a definition of "compound capable of yielding a metal chelator" that would not inform a POSA as to what compounds would be included. *See* Enzo's Brief at 17. In particular, Enzo states that a "compound capable of yielding a metal chelator" is "<u>any</u> compound which is <u>capable</u> of yielding a metal chelator (i.e., yields or gives a compound that is capable of binding a metal to become part of a complex called a 'chelate' . . .)." *See id.* (emphasis in original). Enzo's Brief at 17. Specifically, Enzo's proposed construction does not include any structural features that would assist a POSA in determining whether a given compound is "capable of yielding a metal chelator." Moreover, this term does not have an ordinary or plain meaning that would be understood by a POSA, nor do the '523 Patent claims or specification explain what it means. *See* Leighton Op. Decl. ¶ 73. During prosecution of the

'523 Patent, the Examiner questioned the term "compound capable of yielding a metal chelator," and Enzo provided a definition that is precisely the construction proposed by Roche. *See id.* at ¶ 74. Therefore, in my opinion, a POSA would understand from Enzo's own explanation to the Patent Office that Roche's proposed construction is correct.

H. RESIDUE COMPRISING AN ACTIVATED CARBON (CLAIM 1)

Roche's Position	Enzo's Position
a monomer which contains an aromatic carbon atom that is capable of covalently reacting with an electrophilic compound	a group of atoms which includes at least one reactive carbon atom capable of forming a bond with X

27. Dr. Sherman argues that and that "this term means a group of atoms which includes at least one reactive carbon atom capable of forming a bond with X." Sherman Decl. ¶ 29. As I explained previously, the term "residue" has a specific meaning in biochemistry, and would not be understood by a POSA to refer to "a group of atoms." *See* Leighton Op. Decl. ¶ 77-78. In addition, the term "activated carbon" is generally understood by a POSA to mean "activated charcoal," which is clearly not the intended meaning in the '523 Patent. *See id.* at ¶ 79. However, "activated carbon" is not explicitly defined in the '523 Patent and Dr. Sherman does not argue to the contrary.

28. Therefore, to understand the meaning of the claim term "residue comprising an activated carbon," a POSA would look to the context in which it is used in the '523 Patent claims, specification, and prosecution history, as I have done. *See id.* at ¶ 80-84. Roche's proposed construction is consistent with every use of the term "residue comprising an activated carbon" in the '523 patent. *See id.* The '523 Patent does not suggest any other definition, nor do Dr. Sherman or Enzo provide a single citation to the '523 Patent claims, specification, or prosecution history to support their proposed meaning.

29. Dr. Sherman and Enzo argue that Roche's proposed construction seeks to add inappropriate limitations to the claims. *See* Sherman Decl. ¶ 28; Enzo's Brief at 12. I disagree. As discussed above, Roche's proposed construction ascribes the correct scientific meanings to "residue" and "activated carbon." In addition, in my opinion, there is no significant difference between being "capable of covalently reacting" (as proposed by Roche) and "capable of forming a bond" (as proposed by Enzo);[3] however, Roche's proposed phrase is more precise. Finally, as I explained previously, the type of carbon described in the '523 Patent as being "an activated carbon" can ***only*** react with an electrophilic compound (consistent with Roche's construction), due to its chemical nature. *See* Leighton Decl. ¶¶ 81-83. This is an inherent property of the functional group, not an added limitation. Neither Enzo nor Dr. Sherman argue to the contrary.

I. SAID COMPLEX (CLAIM 15)

Roche's Position	Enzo's Position
The term "said complex" is indefinite under 35 U.S.C. § 112, 2nd paragraph.	This claim phrase is both definite and readily understood to refer to the composition which is said to bind, or complex, with the analyte.

30. In my Opening Declaration, I explained that "said complex" is indefinite because a POSA would not know what "said complex" means. *See* Leighton Op. Decl. ¶ 89. "Said complex" could refer to "the composition," or to "the detectable molecule," or to something else entirely. *See id.* If anything, Enzo's arguments support my opinion.

31. In particular, Dr. Sherman argues that a POSA would understand "said complex" to mean "said composition." *See* Sherman Decl. ¶ 39; *see also* Enzo's Brief at 18 ("A POSA would understand the 'said complex' referred to in step (b) to be the composition which is said to bind, or complex, with the analyte, referred to in element (a)."). But then Dr. Sherman goes on to

[3] In my opinion, a POSA would understand the language "forming a bond" to mean forming a covalent bond. *See, e.g.*, '523 Patent col. 7:34-36 ("–X– generally comprises a covalent bonding function between one of the A^3 -modifiable reactive groups and the group R^1.").

discuss claim 2 of the '523 patent, which refers to "said detectable molecule." *See* Sherman Decl. ¶ 40; *see also* Enzo's Brief at 18 ("A POSA would have understood that these assays typically include the claimed step in which ***an analyte bound in a complex with the detectable molecule*** would be separated from the rest of the original composition ingredients.") (emphasis added).

32. Therefore, even Enzo and Dr. Sherman do not seem to know what "said complex" means. In one instance, they argue that "said complex" means the composition, and in another instance, they argue that "said complex" means the detectable molecule, which is then ***separated from*** the composition. In my opinion, this supports Roche's position that the term "said complex" is indefinite.

III. DEMONSTRATIVE EXHIBITS

33. In the event that I am asked to provide a tutorial or testimony to the Court in connection with claim construction, I intend to use exhibits, including demonstrative exhibits that I have not yet created, to summarize and illustrate my assertions.

I reserve the right to amend or supplement my declaration in the event that additional documents or information is brought to my attention.

I declare under penalty of perjury that the foregoing is true and correct to the best of my own personal knowledge.

Dated: January 24, 2014

James L. Leighton, Ph.D.